



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,074	03/30/2004	Koji Shirakawa	Q80838	3020

23373 7590 06/28/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,074

Applicant(s)

SHIRAKAWA ET AL.

Examiner

Yvette C. Thornton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03302004, 09292005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is written in reference to application number 10/812074 filed on March 30, 2004 and published as US 2004/0197702 on October 7, 2004.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The Information Disclosure Statement(s) filed on March 30, 2004 and September 29, 2004 has/(have) been entered and fully considered.

Claim Rejections - 35 USC § 102

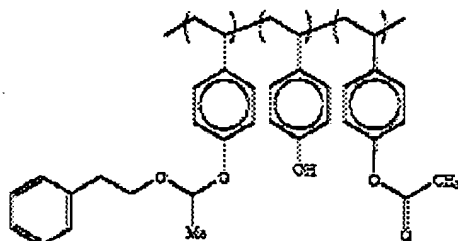
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

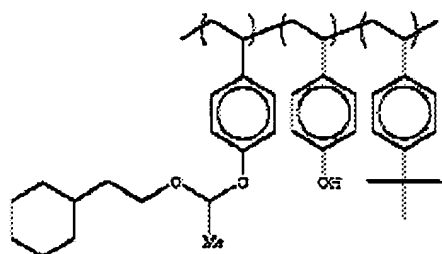
4. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishiyama et al. (US 6537718 B2). Nishiyama teaches a positive photoresist composition comprising (A) a compound which generates an acid upon irradiation with an actinic ray or radiation, (B) a resin comprising repeating units corresponding to hydroxystyrene and (C) (1) at least one solvent selected from the group consisting of propylene glycol monomethyl ether acetate (PGMEA) and propylene glycol monomethyl ether propionate (PGMEP) and (2) at least one solvent selected from the group consisting of propylene glycol monomethyl ether (PGME) and ethoxyethyl propionate (EEP) (abstract). Suitable examples of the taught resins

Art Unit: 1752



include formula (IV 35)

and formula (IV 43)



. See also formula (IV 36) and formula (IV 37). The molecular weight of the taught resin I preferably in the range of 2,000 to 300,000 (c. 38, l. 1-17). It is the examiner's position that formula (IV 35) meets the limitations of the claimed invention wherein the first recurring unit meets the limitations of the claimed formula (X) where R1 is hydrogen, R2 is methyl, R3 and R4 are each hydrogen, m is 2 and Z is a phenyl group. The third recurring unit of formula (IV 35) meets the limitations of an acid decomposable group. Further, formula (IV 43) meets the limitations of the claimed invention wherein the first recurring unit meets the limitations of the claimed formula (X) where R1 is hydrogen, R2 is methyl, R3 and R4 are each hydrogen, m is 2 and Z is the alicyclic group cyclohexyl. The third recurring unit of formula (IV 43) meets the limitations of an acid decomposable group. The taught solvent is present in a weight ratio of 90/10 to 15/85. One preferred combination of the solvents for use in the taught invention is PGMEA/PGME (c. 38, l. 33-54). The said composition may also contain surface active agent (i.e., surfactant), a organic basic compound, and a photosensitizer (c. 38, l. 59-67). The organic basic compound is preferably a nitrogen-containing basic compound having the structure of taught formula (A) (c. 39, l. 51-67).

Art Unit: 1752

5. The taught composition is coated on a substrate, exposed through a predetermined mask, baked and developed to thereby obtain a good resist pattern. The exposure light is preferably a far UV ray (150-250nm). Specific examples include KrF (248), X-ray and electron beam (c. 42, l. 53-c. 43, l. 12).
6. *The examiner notes that the cited reference is the US patent of the PG Publication (US 2001/008739) cited on the European Search Report.*

Conclusion

7. For the sake of brevity, the following references, which are citable under 35 USC 102, will only be cited.

Uenishi et al. (US 6,489,080 B2) pertaining to a positive resist composition (see A 36).

Kodama et al. (US 6,605,409 B2) pertaining to a positive resist composition (see A36 and A43).

Urano et al. (US 6,656,660 B1) pertaining to a resist composition (see Production Ex. 7 and 10).


Fujimori et al. (US 6,756,179 B2) pertaining to a positive resist composition (ex 17).

Fujimori (machine translation JP 2002-049156) pertaining to a positive resist composition.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday 8-6:30.
9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1752

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Yvette Clarke Thornton
Primary Examiner
Art Unit 1752

yct
June 11, 2005